Crane/Derrick Requirements
for all ROICC Construction Contracts

US ARMY CORPS of ENGINEERS EM385-1-1 3 SEPT. 96
SECTION 16 MACHINERY AND MECHANIZED EQUIPMENT
16.C - CRANES AND DERRICKS - GENERAL

16.C.02 Every crane shall have the following documents with them at all times they are to be operated:

a. A copy of the operating manual developed by the manufacturer for the specific make and model of crane; a copy of the operating manual for any crane operator aids with which the crane is equipped

b. The load rating chart for the crane, which shall include:

(1) the crane make and model, serial number, and year of manufacturer;
(2) load ratings for all crane operating configurations, including optional equipment;
(3) wire rope type, size, and reeving; line pull, line speed, and drum capacity; and
(4) operating limits in windy or cold weather conditions.

c. The crane's log book which shall be used to record operating hours and all crane inspections, tests, maintenance and repair. The log shall be updated daily as the crane is used and shall be signed by the operator and supervisor: service mechanics shall sign the log after conducting maintenance or repairs on the crane. Proof of performance testing must be in accordance with section 16.C.13 .

16.C.05 Operator qualifications and training.

a. Proficiency qualifications.

(1) Each operator shall be instructed in and qualified for each type of crane or derrick he/she is to operate.
(2) Qualification shall be by written (or oral) and practical operating examination unless the operator is licensed by a state or city licensing agency for the particular type of crane or derrick. (Qualification for operation of a particular type of crane or derrick on a Corps project shall be valid for a period of three years.) **>See Appendix A**
(3) The qualifying examination procedures in Appendix G shall be followed. When the crane manufacturer recommends operator qualifying examination procedures, those procedures shall be in addition to the requirements of **>Appendix G**

b. Operators shall meet the physical qualifications listed in Appendix G: at the minimum, examinations are required annually.

16.C.07 Cranes and derricks shall be operated, inspected, tested and maintained in accordance with the manufacturer's operating manual for the crane.

16.C.08 A hazard analysis shall be developed and implemented for crane set-up and set-down procedures (Mobilization, assembly erection, dismantling, and demobilization).

16.C.12 Inspection of cranes and derricks shall be in accordance with the manufacturer's recommendations. Inspections shall be conducted by a qualified person and shall cover, at the minimum, the items listed in **Appendix H.**

Start-up Inspections to be completed before each shift and a copy submitted with the DRI.

START-UP INSPECTIONS
for
Cranes and Derricks
US ARMY CORPS of ENGINEERS EM385-1-1 3 SEPT. 96
(To be used on all ROICC Construction Projects)

Contract number _____ **Contractor** _____

Person making inspection _____ **Date** _____

Crane Make:_____ **Model:**_____ **Serial #:**_____

Inspect	**Circle One**
1. All control mechanisms for maladjustment interfering with proper operation	Pass Fail N/A
2. All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.	Pass Fail N/A
3. All operator aids, motion and load limiting devices, and other safety devices for malfunction and inaccuracy of settings.	Pass Fail N/A
4. All cords and Lacing.	Pass Fail N/A
5. All hydraulic and pneumatic systems - with particular emphasis given to those which flex in normal operation of the crane.	Pass Fail N/A
6. Hooks and Latches for deformation, chemical damage, cracks, and wear.	Pass Fail N/A
7. Rope for proper spooling onto the drum(s) and sheave(s) and rope reeving for compliance with crane manufacture's specifications.	Pass Fail N/A
8. Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.	Pass Fail N/A
9. Hydraulic systems for proper oil level.	Pass Fail N/A
10. Tires for recommended inflation pressure (mobile cranes).	Pass Fail N/A
11. Wedges and supports for looseness or dislocation (climbing tower cranes).	Pass Fail N/A
12. Braces and guys supporting crane masts; anchor bolt base connections for looseness or loss of preload (tower cranes and derricks).	Pass Fail N/A
13. Derrick mast fittings and connections for compliance with manufacture's recommendations.	Pass Fail N/A
14. Barge or pontoon ballast compartments for proper ballast; deckloads for proper securing; chain lockers, storage, fuel compartments, and battening	

Periodic Inspection to be completed prior to initial use on ROICC Projects
Submit a copy with DRI .

Periodic Inspections
for
Cranes and Derricks

Contract Number _____ Contractor
_____

Person making inspection _____ Date _____

Crane Make:_____ Model:_____ Serial #:_____

Inspect	**Circle One**
1. Foundation or supports for continued ability to sustain imposed loads.	Pass Fail N/A
2. Braces supporting crane masts (towers) for safe condition; anchor bolt base connections for tightness or retention of preload; wedges and supports of climbing cranes for tightness and proper positioning.	Pass Fail N/A
3. Guys for proper tension.	Pass Fail N/A
4. For derricks, inspect all cords and lacing, tension in guys, plump of the mast, and derrick mast fittings and connections for compliance with manufacturer's recommendations.	Pass Fail N/A
5. Crane structure and boom and jib members, and their connections, for absence of deformation, cracks, or corrosion.	Pass Fail N/A
6. Bolts, rivets, nuts, and pins for tightness.	Pass Fail N/A
7. Proper tension (torque) of high strength (traction) bolts used in connections and at the slewing bearing.	Pass Fail N/A
8. Power plants for performance and compliance with safety requirements.	Pass Fail N/A
9. Electrical apparatus for proper functioning and absence of signs of excessive deterioration, dirt, and moisture accumulation.	Pass Fail N/A
10. Hydraulic and pneumatic tanks, pumps, motors, valves, hoses, fittings, and tubing for proper functioning and absence of damage, leaks, and excessive wear; hydraulic and pneumatic systems for proper fluid/air levels.	Pass Fail N/A
11. All control mechanisms for adjustment for proper operation, no excessive wear of components, and absence of contamination by lubricants or other foreign matter.	Pass Fail N/A
12. Drive components such as pins, bearings, wheels, shafts, gears, sheaves, drums, rollers, locking and clamping devices, sprockets, drive chains or belts, bumpers, and stops for absence of wearing, cracks, corrosion, or distortion .	Pass Fail N/A

13. All crane function operating mechanisms for proper operation, proper adjustment, and the absence of unusual sounds. Pass Fail N/A

14. Travel, steering, holding, braking and locking mechanisms for proper functioning and absence of excessive wear or damage. Pass Fail N/A

15. Tires for damage or excessive wear. Pass Fail N/A

16. Brake and clutch system parts, linings, pawls, and ratchets for absence of excessive wear. Pass Fail N/A

17. Wire rope. Visually inspect all running ropes, visually inspect all counterweight ropes and load trolley ropes, if provided. Visual inspections should concentrate on discovering gross damage, such as that listed below, which may be an immediate hazard: particular attention should be given to boom hoist ropes and sections of rope subject to rapid deterioration such as at flange points, crossover points, and repetitive pickup points on drums.

    a. Distortion of rope such as kinking, crushing, unstranding, birdcaging, main strand displacement, core protrusion; Pass Fail N/A

    b. general corrosion; Pass Fail N/A

    c. number, distribution, and type of visible broken wires; Pass Fail N/A

    d. broken or cut strands; Pass Fail N/A

    e. core failure in rotation resistant ropes (care shall be taken when inspecting rotation resistant ropes because of their susceptibility to damage from misuse and potential for deterioration when used on equipment with limited design parameters). Pass Fail N/A

    f. reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires. Pass Fail N/A

    g. severely corroded or broken wires at end connections, severely corroded, cracked, bent, worn, or improperly applied end connections. Pass Fail N/A

    Care shall be taken when inspecting rope sections subject to rapid deterioration, such as the following: sections in contact with saddles, equalizer sheaves, or other sheaves where rope travel is limited; sections of the rope at or near terminal ends where corroded or broken wires may protrude; sections subject to reverse bends; and sections of rope which are normally hidden during routine visual inspections, such as parts passing over outer sheaves.

18. Sheaves for the absence of cracks in the flanges and spokes. Pass Fail N/A

19. Rope for proper spooling onto drum(s) and sheave(s) and proper reeving. Pass Fail N/A

20. Hooks and latches for absence of deterioration, chemical damage, cracks, and wear. Pass Fail N/A

21. Crane operator aids (safety devices) and indicating devices for proper operation. Pass Fail N/A

22. Motion limiting devices for proper operation with the crane unloaded (each motion should be inched into its limiting device to run in at slow speed with care exercised) and load limiting devices for proper operation and accuracy of settings. Pass Fail N/A

23. Load, boom angle, load or load moment indicating, wind, and other indicators for proper operation and accuracy's within the tolerances recommended by the manufacturer. Pass Fail N/A

24. Safety and function labels for legibility and replacement. Pass Fail N/A

25. For floating plant, inspect ballast compartments for proper ballast; deckloads for proper securing; safety of chain lockers, storage, fuel compartments; battening of hatches; hull void compartments sounded for leakage; tie-downs for barge-mounted land cranes for absence of wear, corrosion, and tightness; cleats, bitts, chocks, fenders, capstans, ladders, stanchions for absence of corrosion, wear, deterioration, and deformation; take four corner draft readings. Pass Fail N/A